**WHAT IS CLAIMED IS:**

**1**. A sensor array device for detecting an analyte in a fluid, said device comprising:

an array of sensors; and

an infrared detector operatively associated with each sensor, wherein said infrared detector measures a response in the presence of said analyte.

**2**. The sensor array device according to claim **1**, wherein said infrared detector is an infrared camera.

**3**. The sensor array device according to claim **1**, further comprising a thermographic image display.

**4**. The sensor array device according to claim **1**, wherein said detector measures a matrix of responses.

**5**. The sensor array device according to claim **4**, wherein said matrix is 256 x 256.

**6**. The sensor array device according to claim **1**, wherein at least one of said sensors in the array is a member selected from the group consisting of conducting/nonconducting regions sensors, bulk conducting polymer films, surface acoustic wave devices, fiber optic micromirrors, quartz crystal microbalances, dye impregnated polymeric coatings on optical fibers, sintered metal oxide sensors, phthalocyanine sensors, Pd-gate MOSFET devices, electrochemical cells, conducting polymer sensors, lipid coating sensors, metal FET structures, carbon black-polymer composites, micro-electro-mechanical system devices, micromachined cantilevers, and micro-opto-electro-mechanical system devices.

**7**. The sensor array device according to claim **6**, wherein at least one of said sensors in the array is a conducting/nonconducting regions sensor.

**8**. The sensor array device according to claim **1**, further comprising a computer having a resident comparison algorithm.

9. The sensor array device according to claim **8**, wherein said comparison algorithm is performed using a pattern recognition algorithm which is a member selected from the group consisting of principal component analysis, Fisher linear discriminant analysis, soft independent modeling of class analogy, K-nearest neighbors, and canonical discriminant analysis.

10. The sensor array device according to claim **1**, wherein said analyte is a member selected from the group consisting of alkanes, alkenes, alkynes, dienes, alicyclic hydrocarbons, arenes, alcohols, ethers, ketones, aldehydes, carbonyls, carbanions, polynuclear aromatics, heterocycles, organic derivatives, biomolecules, microorganisms, fungi, bacteria, microbes, viruses, metabolites, sugars, isoprenes and isoprenoids, fatty acids and their derivatives.

11. The sensor array device according with claim **1**, wherein said analyte is a microorganism marker gas.

12. The sensor array device according to claim **1**, wherein said sensor array is used in an application selected from the group consisting of environmental toxicology, remediation, biomedicine, material quality control, food monitoring, agricultural monitoring, heavy industrial manufacturing, ambient air monitoring, worker protection, emissions control, product quality testing, oil/gas petrochemical applications, combustible gas detection, $H_2S$ monitoring, hazardous leak detection, emergency response and law enforcement applications, explosives detection, utility and power applications, food/beverage/agriculture applications, freshness detection, fruit ripening control, fermentation process monitoring and control, flavor composition and identification, product quality and identification, refrigerant and fumigant detection, cosmetic/perfume applications, fragrance formulation, chemical/plastics/pharmaceuticals applications, fugitive emission identification, solvent recovery effectiveness, hospital/medical applications, anesthesia and sterilization gas detection, infectious disease detection, breath analysis and body fluids analysis.

13. The sensor array device array according to claim **1**, further comprising robotic armature for high throughput assay screening.

14. The sensor array device according to claim 1, wherein said array of sensors comprise about 10 to about 100 sensors.

15. The sensor array device according to claim 1, wherein said array of sensors comprise about 100 to about 1000 sensors.

16. The sensor array device according to claim 1, wherein at least two sensors are compositionally different.

17. The sensor array device according to claim 1, wherein said sensor array is part of a handheld device.

18. The sensor array device according to claim 1, wherein said fluid is a gas.

19. A method for monitoring the quality of a sensor, comprising: photographing said sensor with an infrared camera to generate a thermographic image; and analyzing said thermographic image thereby monitoring the quality of said sensor.

20. The method according to claim 19, wherein at least one of said sensors in said array is a member selected from the group consisting of conducting/nonconducting sensors, bulk conducting polymer films, surface acoustic wave devices, fiber optic micromirrors, quartz crystal microbalances, dye impregnated polymeric coatings on optical fibers, sintered metal oxide sensors, phthalocyanine sensors, Pd-gate MOSFET devices, electrochemical cells, conducting polymer sensors, lipid coating sensors, metal FET structures, carbon black-polymer composites, micro-electro-mechanical system devices, micromachined cantilevers, and micro-opto-electro-mechanical system devices.

21. The method according to claim 20, wherein at least one of said sensors in said array is a conducting/nonconducting regions sensor.

22. A method for identifying the conducting path of a sensor, comprising: photographing the sensor with an infrared camera to generate a

thermographic image; and analyzing the thermographic image to identify the conducting path of said sensor.

**23.** The method according to claim **22**, wherein said sensor is a member selected from the group consisting of conducting/nonconducting regions sensors, bulk conducting polymer films, surface acoustic wave devices, fiber optic micromirrors, quartz crystal microbalances, dye impregnated polymeric coatings on optical fibers, sintered metal oxide sensors, phthalocyanine sensors, Pd-gate MOSFET devices, electrochemical cells, conducting polymer sensors, lipid coating sensors, metal FET structures, carbon black-polymer composites, micro-electro-mechanical system devices, micromachined cantilevers, and micro-opto-electro-mechanical system devices.

**24.** A computer program product to calculate the uniformity of a infrared detector output having a plurality of pixels, said computer program product comprising:

code for finding the temperature at each pixel of said output;

code for sorting said plurality pixels of said output based on temperature ;

code for calculating the cumulative sum of temperature and plotting the cumulative sum against the ratio of said plurality of pixels;

code for calculating the ratio of pixels that generates the 50% cumulative sum of temperature; and

a computer readable storage medium for holding said codes.

**25.** The computer code product according to claim **24**, wherein said infrared detector output is a thermograph.